

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000520**Date Inspected:** 23-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Lu Jian Ping, Xu Le Feng**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** 89 and 144 meter mock-up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Sherri Brannon arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions. While on site the QA Inspector observed and/or discovered the following.

**114 Meter Mockup-skin plate B (UT-repair):**

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Jiang Zhou ID #040261 welding fill passes at weld joint #5 & 8 for skin plate B sub assembly MA101. Mr. Zhou was observed welding in the 1G (flat) position utilizing flux cored arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Lu Jian Ping verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector Brannon also verified the preheat temperature to be a minimum of 110°C and measured the welding parameters to be 270 amps, 28 volts, a travel speed of 468 mm/min and a shielding gas flow of 22L/min. Welding parameters measured by QA Inspector Brannon appear to be in general compliance with the approved WPS-345-FCAW-1G (1F) repair-1, Revision 0.

**114 Meter Mockup-skin plate D:**

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Cao Henjin ID #66420 welding fill passes at weld joint #5 side A for skin plate D sub assembly MA113. Mr. Henjin was observed welding in the 2G (horizontal) position utilizing flux cored arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Xu Le Feng verifying that the welding parameters and pre-heat were in accordance with the Welding

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Procedure Specification (WPS). QA Inspector Brannon also verified the preheat temperature to be a minimum of 110°C and measured the welding parameters to be 295 amps, 31 volts, a travel speed of 300 mm/min and a shielding gas flow of 20L/min. Welding parameters measured by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2232-TC-U5-F, Revision 1.

### 114 Meter Mockup-skin plate D:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Wen Yanyan ID #66734 welding fill passes at weld joint #5 side b for skin plate D sub assembly MA113. Mr. Yanyan was observed welding in the 2G (horizontal) position utilizing flux cored arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC Inspector Xu Le Feng verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector Brannon also verified the preheat temperature to be a minimum of 110°C and measured the welding parameters to be 293 amps, 31 volts, a travel speed of 308 mm/min and a shielding gas flow of 19.5L/min. Welding parameters measured by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2232-TC-U5-F, Revision 1.

### 114 Meter Mockup:

QA Inspector Brannon randomly observed ZPMC personnel drilling 30mm diameter bolt holes in various longitudinal stiffener plates for the 114 meter mock-up.

### 114 Meter Mockup, skin plate C (UT-repair):

QA Inspector Brannon randomly observed ZPMC personnel at skin plate C removing an ultrasonic testing (UT) indication found by ZPMC by method of carbon air gouging on weld joint #13 sides A and B sub assembly MA112.

### 114 Meter Mockup-skin plate C:

QA Inspector Brannon randomly observed ZPMC ultrasonic testing (UT) technicians performing ultrasonic inspection on the complete joint penetration welds for skin plate C weld joints #5, 8 & 11 sub assembly MA111.

### 89 Meter Mockup-Façade Face E:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Wang Zhonghua ID #053753 fillet welding joining piece #P1042 & MA32 weld joint #4. Mr. Zhonghua was observed welding in the 2F (horizontal) position utilizing a shielded metal arc welding (SMAW) process with a 4.0mm diameter electrode, filler metal brand TL-508, class E7018 manual. QA Inspector Brannon observed the ZPMC QC Inspector Xu Le Feng verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector Brannon also verified the preheat temperature to be a minimum of 110°C and measured the welding parameters to be 165 amps. Welding parameters measured by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-P-2112, Revision 1.

The following digital photograph illustrates ZPMC personnel in the process of removing a ultrasonic testing (UT) indication by method of carbon air gouging.

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## Summary of Conversations:

No revelant conversations on this date.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Brannon,Sherri	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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